

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO CARPETS

(71) I, WOLFGANG ANGER, a citizen of the German Federal Republic of Postfach 1209, 3002 Wedemark 1, the German Federal Republic, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a carpet, especially 10 a bathroom carpeting mat cut to length from a continuously fabricated length of tufted fabric.

Such bathroom carpeting mats, herein-after referred to as mats, are cut to length 15 from a continuously produced strip of tufted fabric having the width of the tufting machine, and are cut longitudinally and transversely of the strip to form the bathroom mats.

For the purpose of manufacture, various 20 machines may be used, such as the cut-pile machine which can only make pile fabric, or the cut-loop machine which can make both pile carpets and also looped fabric 25 carpets or the two combined.

In addition, table tufting machines with 30 which the method of tufting was really developed may be used. This type of manufacture is however uneconomical.

The production of bathroom mats is subject 35 to the taste of the purchasing public and the current fashion and is therefore usually carried out in a number of colours or shades, which on account of the particular characteristic of the cut-pile or cut-loop machine used can only be arranged in longitudinal strips, so that a bathroom mat of this type consists, for example, of two or more colours, which extend in strips longitudinally in such

40 a manner that the longitudinal edges of the bathroom mat possess one and the same colour, whereas in the intervening region one or more other colours can appear, including one or more repetitions of the colour of the longitudinal edge strips of the cut mat.

45 Between the longitudinal edge strips, the pile can alternate with looped fabric or be combined therewith in particular patterns, but this invention demands a pile for the longitudinal edge strips. Such a uniformly

coloured pile cannot be applied to the transversely extending edges, that is the transverse edge strips which extend perpendicularly to the manufacturing direction of the tufting machine, if a number of colours appear in the cut-to-length bathroom mat. It is also not possible with the cut loop machine to carry out a change of the coloured threads or a change of the coloured yarn transversely to the machine, unless in the differently coloured centre strips, each second row has been made in the colour of the longitudinal edge strip and concealed as a loop. This known method, however, also possesses several other disadvantages.

In addition, for the production of such mats, the so-called "controlled needle machine" is used, which can make two-colour patterns, but only in pile fabric. With such a machine, it is possible for the undesired colour to be caused to continue non-tufted by control of the needles, simply by making the threads continue flat upon the bottom of the mat. This however has disadvantages of another type.

Hitherto, therefore, the remedy has been found in tufting-on an overtuft of one or more rows around the entire peripheral edge of the bathroom mat.

Disadvantages certainly occur from the overtuft, these consisting especially in the fact that this overtuft leads to a wide thickened edge which is frequently unpleasant in appearance and a nuisance. Also, as a result of the additional thickening of the nap in the edge region a distortion and inward curving of the edge strips, especially at the corner, occurs, so that a bathroom mat manufactured in this way does not lie well, that is to say it does not lie flat and smooth on the floor in the edge regions. With this method, as a consequence of the peripheral tufting in a number of rows in one operation, the corners must for practical reasons be rounded, giving an appearance which with the usual small size of a bathroom mat is considered to be a drawback by comparison with a neat, rectangular corner.

A further disadvantage is that the provision of a peripheral overtuft results in an

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- increase in cost caused by the unnecessary additional material which must be applied for purely aesthetic reasons and the resultant extra working time.
- 5 It is an object of the present invention to provide a cut-to-length carpet, especially a bathroom carpeting mat, which does not suffer from the disadvantages referred to, which only contains a small quantity of 10 additional material, which only needs additional tufting to a limited extent, which lies flat and which does not have a thick, beading-like edge caused by a peripheral overtuft.
- According to the present invention there 15 is provided a carpet, especially a bathroom carpeting mat, cut to length from a continuously fabricated length of tufted fabric in which the carpet has longitudinal edge strips of pile tufts of one colour with one or more 20 longitudinal strips of tufts of a different colour therebetween, the tufts of a different colour are formed as loop tufts or are sheared or omitted at locations at edge strips transverse to the longitudinal edge strips.
- 25 and these locations are furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips.
- A carpet according to this invention consists of a middle panel and a frame which is of 30 a uniform colour and which consists of two longitudinal edge strips and two transverse edge strips. The longitudinal edge strips may be of a different width from the transverse edge strips but the pile of the middle panel 35 and that of the frame have a uniform height of nap and the frame is formed of pile tufts. The middle panel consists either only of pile or of a pattern of pile and loops and is single-colour or multi-colour, whereas the frame is 40 of one colour.
- This pile at the transverse edge strips is preferably tufted-on in a second operation on a table tufting machine.
- The term "sheared" is here to be understood as meaning a shortening of the pile tuft by a mechanical operation. It is, of course, also possible for any other method to be used in order to shorten the pile so that, in practice, it projects only a quite short 45 distance beyond the bottom of the bathroom mat in this region of the transverse edge strip.
- Only those tufts of a different colour to that of the longitudinal edge strips need be 50 formed as loop tufts or sheared or omitted at locations at the transverse edge strips and those locations furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips.
- 55 Alternatively, whatever the colour of the tufts between the longitudinal edge strips, the tufts of the transverse edge strips extending between the longitudinal edge strips can be formed as loop tufts or sheared or omitted and the transverse edge strips
- extending between the longitudinal edge strips furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips.
- As a further alternative, whatever the colour of the tufts in the transverse strips between the longitudinal edge strips, the tufts of the transverse edge strips extending between the longitudinal edges of the carpet can be formed as loop tufts, or sheared or omitted and the transverse edge strips furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips.
- 70 A cut-to-length carpet according to the invention has a peripheral edge strip of substantially the same density as the overall nap, so that the impression of a uniform product results, although if the overtufted pile nap is spread out, the underlying loop material or shortened pile nap can be seen and it is also possible for the overtufted pile to be detected if the rear side of the carpet is inspected.
- 80 It will be seen and is self-evident that the invention enables a considerable amount of work and material to be saved, thus favouring rational production in conjunction with a corresponding economic price. The longitudinal edge strips of the cut-to-length carpet are produced to their final form, colour and shape during the continuous fabrication of the tufted fabric on the machine, whereas the transverse edge strips of the cut-to-length carpet are produced in the above-described 90 manner, after the carpet has been cut to length. For this purpose it is necessary, in the production of the continuously fabricated length of tufted fabric upon the tufting machine, e.g., a cut-loop machine, to produce 100 at those points at which the transversely extending cuts of the carpet to be formed will be located, a corresponding strip of loop tuft in the parts which are of a different colour from the edge strips or over the entire 110 region of the transverse edge strips, whereby the cut extends through the middle of the strips of loop tufts extending transversely across the sheet of material, so that a lower and upper transverse edge strip respectively 115 for a cut-to-length carpet are produced on each side of the cut.
- 120 The invention makes use of economic tufting on a large tufting machine for by far the greater part of the bathroom mat. Only a comparatively small portion is subsequently table-tufted.
- 125 The invention is now described in more detail with reference to the drawings which serve to explain it and represent examples thereof.
- Fig. 1 shows a length of continuously fabricated tufted fabric as it comes from a cut-loop machine, and consisting of a large number of individual tufted-on, coloured 130

strips, usually recurring in a given sequence, Fig. 2 shows the cut-to-length bathroom mat which is initially cut from the tufted fabric produced by the tufting machine.

5 Fig. 3 shows a cut-to-length, finished bathroom mat according to the present invention, and

10 Fig. 4 shows a cut-to-length carpet of the type entirely in pile manufacture, but with a differing form of overtufting of the transverse edge strip.

15 A continuously fabricated length of tufted fabric can be manufactured of a width to suit the machine and to include a number of adjacent longitudinally extending regions which may be individually coloured and patterned and from which bathroom carpets may be cut to length. The width of such adjacent regions is selected to suit the purpose in view. In Fig. 1, the continuously fabricated length of tufted fabric is shown as having four adjacent regions, A, A¹, B and C defined by the longitudinal edges of the fabricated length and the lines 1, 2 and 3. The two

20 left-hand regions A and A¹ are each subdivided into five longitudinal strips which are designated I, II, III, IV and V. Alternate strips I, III and V are dark green (dgr) and strips II and IV are light green (lgr). In

25 regions B and C, the strip corresponding to strip III of regions A and A¹ is light green and the same colour as the strips corresponding to strips II and IV.

30 When the regions are separated by cutting along the lines 1, 2 and 3, the individual regions have longitudinal edge strips in the direction of the arrow F (which represents the direction of manufacture) which are of a dark green pile. If a carpet is cut to length 35 from these regions, for example, by cutting along the broken lines 4 and 5, the colour at the transverse edges is not uniform. For example, for the regions A and A¹ of Fig. 1, the colours at the transverse edges would be 40 dark green, light green, dark green, light green and dark green. For the regions B and C the colours would be dark green, light green, dark green.

45 According to the invention, the tufts of the strips of a different colour to the longitudinal edge strips are formed as loop tufts or are sheared or are omitted at locations or areas where the strips of a different colour terminate at the intended cutting lines 4 and 5. In Fig. 1, these areas are the shaded areas of the strips II and IV in region A.

50 Fig. 2 shows, on a somewhat enlarged scale, a cut-to-length carpet which, as in region A of Fig. 1, consists of five longitudinal strips, the dark green edge strip I (referenced 9), the light green strip II, dark green III, the light green strip IV and the dark green strip V (referenced 8). It can readily be seen that only the areas referenced 6 and

65 7 in the region of the light green colour and

the loops disposed there in accordance with the shaded areas of Fig. 1 of strips II and IV, need to be furnished with a pile-overtuft to produce a frame of uniform colour. This can be carried out very rapidly in one operation on a table machine so that a peripheral frame is produced, as shown in Fig. 3, which is of uniform colour and nap length. In the upper edge region of the cut-to-length carpet according to Fig. 3, the individual strips are again indicated by dotted lines. The longitudinally extending edge strips 8 and 9 are already of dark green pile tuft, also the central strip III (referenced 10) is already of dark green pile tuft and extends right to the transverse edges of the carpet, so that it is only in the regions 6 and 7 of the light green strips II and IV that dark green pile must be tufted on, in order to give a uniformly wide, dark green edge strip 12, extending all round as shown in Fig. 3.

70 This result is attained by an overtuft in the shaded areas initially furnished with loop tufts of strips II and IV. Production has therefore been considerably simplified and a saving of material achieved as can be seen when Fig. 3 is considered and the ratio of areas of regions 6 and 7 to the entire peripheral edge strip 12 is established.

75 In the example so far described, only two colours have been used, namely dark green and light green, and moreover the dark green colour repeats again in strip III, in the regions A and A¹ of Fig. 1. This is only one example, which can be modified in very many ways. Instead of three strips II, III and IV between the longitudinal edge strips of the cut-to-length carpet, it is possible to have more or fewer strips of nap of different colours. These may be patterned by pile and 80 loop (cut-loop) or may consist of a pile or of a loop nap. When, in the transverse edge area, that is to say in the peripheral edge area at 13 and 14 (Figs. 2 and 3), a number of differing colours appear, which are 85 different from the colour of the previously determined longitudinal edge strip nap colour, then the ends of the strips II, III and IV within the transverse edge strips 13 and 14 or the whole of the transverse edge strips, 90 are made in loop tuft which is then overtufted with a pile, which corresponds in colour and 95 nap length to the pile of the longitudinal edge strips 8 and 9.

100 Fig. 4 shows a cut-to-length carpet, for example a bathroom carpeting mat, which is constructed entirely in pile nap, the two longitudinal edge strips 20, 21 being formed in a dark green pile tuft, while the wide middle portion 22 is in a light green pile 105 tuft as for the regions B and C of Fig. 1. The regions B and C are separated and cuts are made along lines 4, 5 to produce a cut-to-length carpet having transverse edge strips 23 and 24 which consist of parts of different 110

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- colours and this gives an unfavourable impression which does not produce the image of a finished product to the purchaser. In accordance with the invention the central area 25 of the transverse edge strip 24 shown as the shaded area between the longitudinal edge strips 20 and 21 in part A of Fig. 4 or the entire transverse edge strip between the longitudinal edges as shown shaded at 23 in part B of Fig. 4 is formed in loop, or it is sheared so that the nap is drastically shortened, and the looped or sheared area is pile tufted in the colour and nap length of the longitudinal edge strips 20 and 21. The width of the looped or sheared area in this example is equal to the width of the longitudinal edge strips 20 and 21, so that an edge strip of uniform width results.
- It is possible, within the concept of this invention for the width of the transverse edge strips to be different from the width of the longitudinal edge strips.
- When a "controlled needle machine" is used for producing the pile, the control of the needles would be carried out in such a way that in the regions 25 or 23 of Fig. 4, no tufting is carried out, but the threads are simply pulled beyond the bottom, so that these regions remain untufted. Such untufted regions would then subsequently be furnished with a pile tuft.
- The advantage of the subsequent application of a pile tuft in the transverse edge region across the entire width of the mat as for region 23 of Fig. 4 is that a completely uniform structure results, whereas with the introduction of a pile tuft in accordance only for the region 25, the beginning and end of the introduced pile tuft can sometimes be seen. This could result in the impression of a "repair" which is avoided by tufting the whole of the transverse edge strip as at 23.
- WHAT I CLAIM IS:—**
- 45 1. A carpet, especially a bathroom carpeting mat, cut to length from a continuously fabricated length of tufted fabric in which the carpet has longitudinal edge strips of pile tufts of one colour with one or more longitudinal strips of tufts of a different colour therebetween, the tufts of a different colour are formed as loop tufts or are sheared or omitted at locations at edge strips transverse to the longitudinal edge strips and these locations are furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips. 50
 - 5 2. A carpet according to Claim 1 in which, whatever the colour of the tufts in the strips between the longitudinal edge strips, the tufts of the transverse edge strips extending between the longitudinal edge strips are formed as loop tufts, or are sheared or omitted and the transverse edge strips extending between the longitudinal edge strips are furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips. 55
 - 10 3. A carpet according to Claim 1 in which, whatever the colour of the tufts in the strips between the longitudinal edge strips, the tufts of the transverse edge strips extending between the longitudinal edges of the carpet are formed as loop tufts, or are sheared or omitted and the transverse edge strips are furnished with pile tufts corresponding in colour and nap length with those of the longitudinal edge strips. 60
 - 15 4. A carpet according to Claim 1, 2 or 3 in which the transverse edge strips are of the same width as the longitudinal edge strips. 65
 - 20 5. A carpet according to Claim 1, 2 or 3 in which the transverse edge strips are of a different width from the longitudinal edge strips. 70
 - 25 6. A carpet constructed substantially as herein described with reference to Fig. 1, 2, 3 or 4 of the accompanying drawings. 75
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COMPLETE SPECIFICATION

2 SHEETS

*This drawing is a reproduction of
the Original on a reduced scale
Sheet 1*

FIG. 1

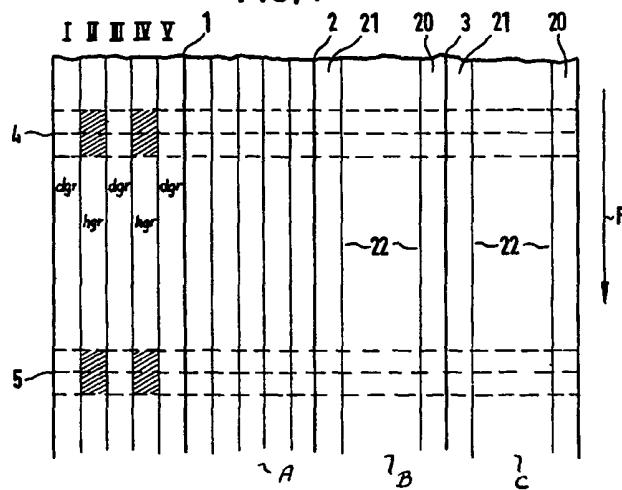


FIG. 2

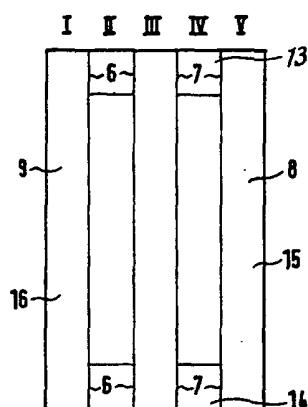


FIG. 3

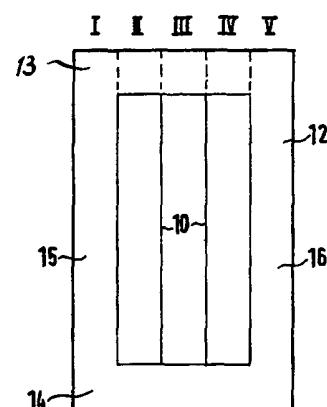


FIG.4

